High-Luminosity (HL) LHC

- Expected to collect ~ 3000/fb integrated luminosity @ E_{CM} =14 TeV
  - Operations from 2025 to 2035
  - x10 more data than what previously collected by the LHC
  - instantaneous luminosities ~ 5-7x10^{34} $cm^{-2}s^{-1}$
- Goal: broaden the physics program
  - SM precision measurements
    - Higgs properties, PDF, QCD, TGCs, etc...
  - New physics searches
    - Dark Matter, SUSY, BSM, extra dimensions, etc...

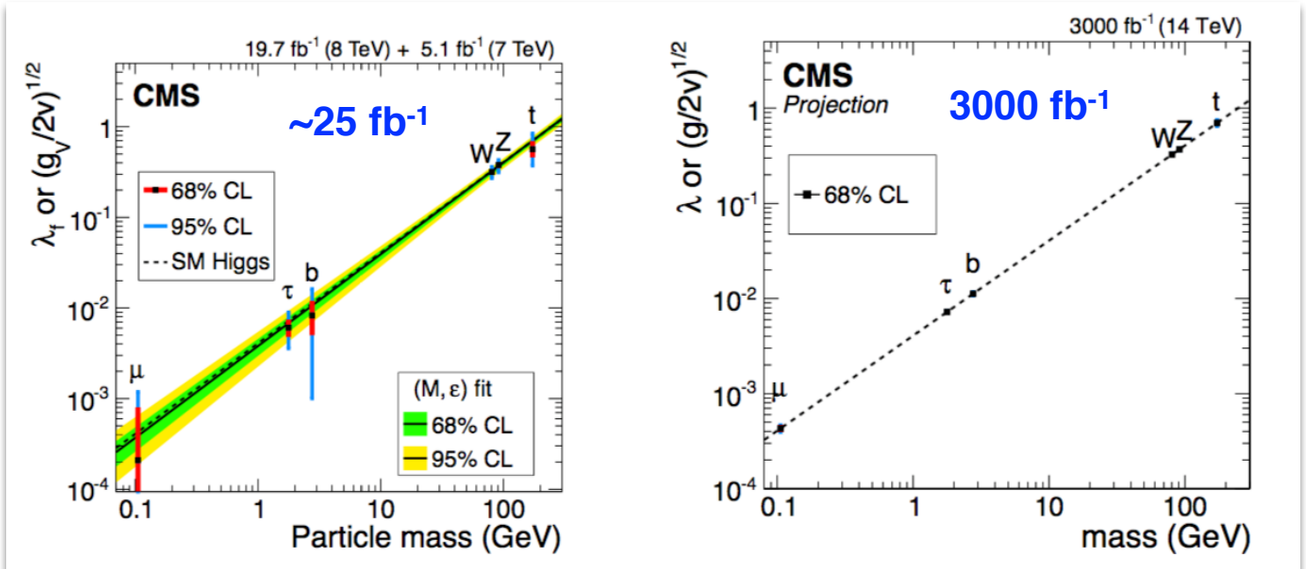
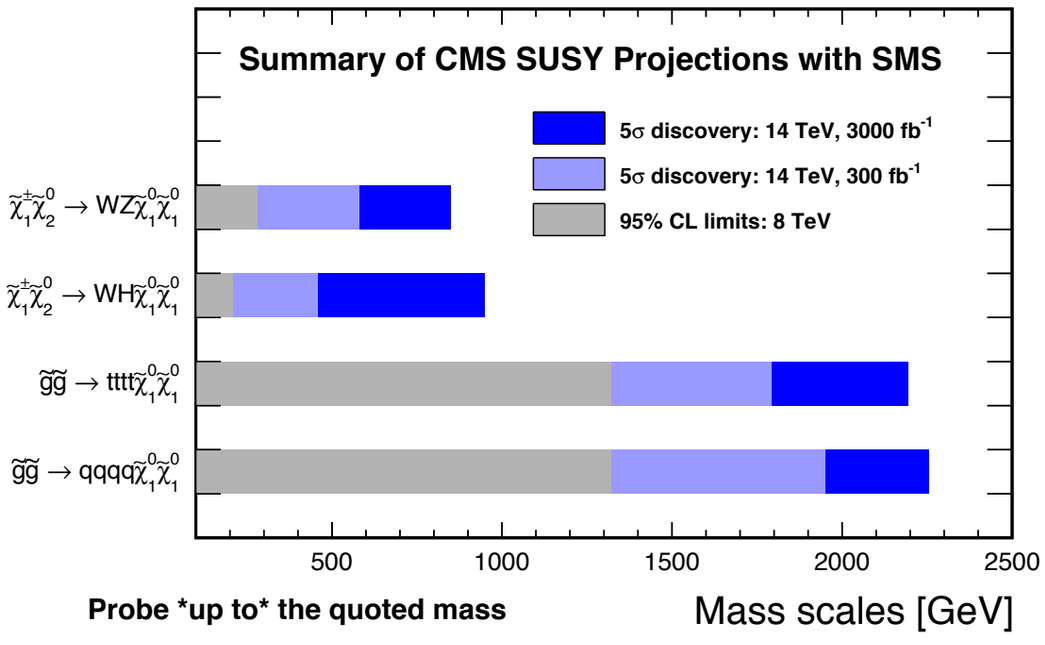


Figure 1.10: Observed and projected precision on Higgs boson couplings as a function of boson or fermion masses.



Why add a track-trigger @ L1?

Expected improvements

- charged lepton identification/ transverse momentum (P_T) resolution
- isolation of e/γ

Novelties

- vertex reconstruction from L1 tracks
  - reject PU jets
  - improve MET performances
  - ...

Great complements to current triggers